Stand-down Discussion with WCC

R. Casey

12/2/04

Brookhaven Science Associates
U.S. Department of Energy

BROOKHAVEN
NATIONAL LABORATORY

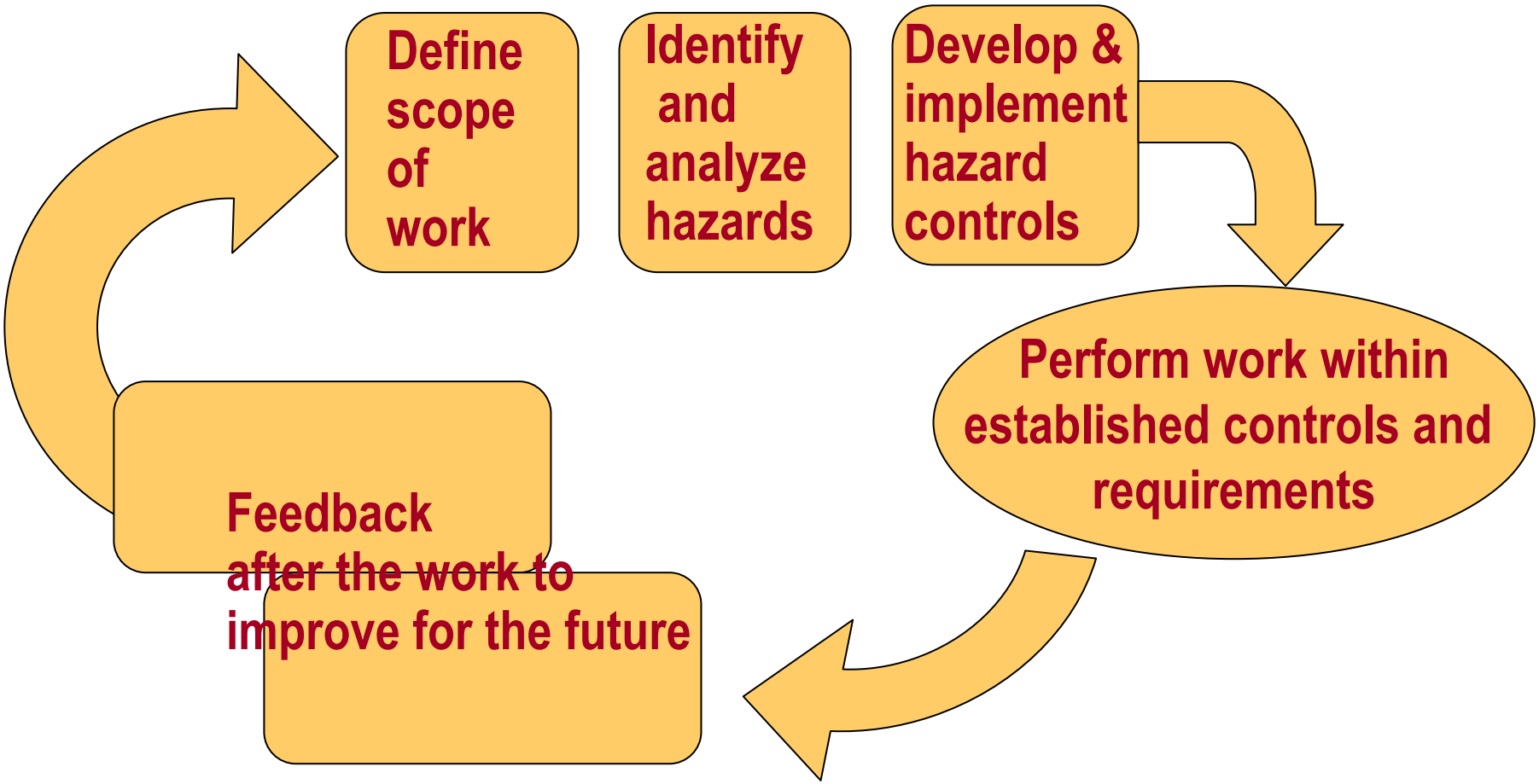
Work planning plays a critical role in safety

- It is a key element in ISM
- Ensures that hazards have been identified and that controls have been established
- Provides a process for feed-back for improvement

The key elements of our safety program

- Awareness, involvement, commitment of all personnel
- Work planning
- Training and qualification
- Well defined and understood safety requirements
- Work performed in accordance with training and BNL requirements

The steps of work planning



Work Planning Implementation at NSLS

- All work is screened by a WCC to determine scope and hazards. (see flowchart)
- Work that is low hazard can be assigned to a qualified person and conducted. ("Skill of the worker")
- Work that is moderate or high hazard will require additional review and a determination if a permit is needed
- Work that is done in accordance with a written procedure does not require further review.

These rules apply to all work except office and administrative duties.

Work planning at the NSLS

- Much of the work at NSLS is low hazard
- Much of the screening and planning is done in advance through worker qualification program (qualification matrices) or through use of written procedures
- Routine activities covered by the matrix or by procedure don't require additional screening unless change in scope of work or nature of hazards is introduced
- Screening guidelines should be used by WCC to determine if additional planning or permits are required. About 50 work permits per year have been issued, mostly for work coordination

What is status of NSLS work planning program?

- Generally viewed to be excellent program.

- Electric shock incident raised questions

Current BNL & DOE Concerns about Work Planning Implementation

- Work performed under “skill-of-the-worker” may have inadequate hazard assessments.
- Workers may not know how to mitigate hazards encountered on assigned job tasks.

Electric Shock Work Planning Issues

- Person responsible for equipment was unclear
- WCC assigned job as “skill of the worker”
- Hazards associated with the work were not identified and controlled
- Lock-out and tag-out of energy source was not done
- Person without knowledge of hazards provided access to the equipment
- Worker assumed it was safe to do work

WCC Lessons learned

- Do not assign work as “skill of the worker” on equipment with electrical or other energy sources that you are unfamiliar with. “Skill of the worker” should be restricted to tasks for which the worker has been qualified by the supervisor, and it is known that the work is low hazard.

- Work permits should be expected for work with unfamiliar equipment that is potentially hazardous unless a designated responsible person has confirmed the equipment is in a safe state and has placed the first lock-out when required.

WCC Lessons learned

- When screening work to determine hazard level and work planning requirements, be particularly cautious with equipment that has no readily identifiable responsible person. "Legacy" equipment with unclear ownership may have hazards that have been long forgotten and work should not proceed on these systems until their function, hazards and operation are defined.

Worker Lessons learned

All electrical equipment must be de-energized before work may begin on the system. You must assure that the power supply is de-energized, locked, and tagged out and confirmed safe before work begins. Make no assumptions. If there is uncertainty, contact your supervisor and ask to initiate a formal work plan.

Where do we go from here

- Inventory of equipment requiring lock-out/tag-out will be established and responsible person will be designated
- Changes in NSLS work planning requirements are being examined
  - Qualification matrices
  - Training and retraining
  - Scientists and engineers will be expected to participate in work planning
- OHSAS 18001 will be addressed
- Reflect on the lessons learned and take them to heart - do not permit work to be performed that has not been adequately screened for hazards and planned as required.
- Remember – safety first

Suppose someone gets hurt in spite of our best efforts

Good planning does not eliminate the possibility of an accident.

- But it will significantly reduce the probability of accident

- We are all human and errors will occur.

- In addition, sometimes events outside our control will occur that can lead to an accident.

For example, how many of these NSLS occupational injuries would have been prevented by better work planning

- Slipped or tripped on floor and fell – 3
- Moving or lifting heavy loads – 2
- Slipped and fell on stair way – 2
- Cuts from sharp objects (e.g. bandsaw, razor knife, sheet metal) – 4
- Hernia from assuming awkward positions in difficult job – 1
- Fell while riding bicycle - 1
- Hurt back bending over - 1
- Stepped in pothole in parking lot and fell – 1
- Struck by car while crossing road – 1

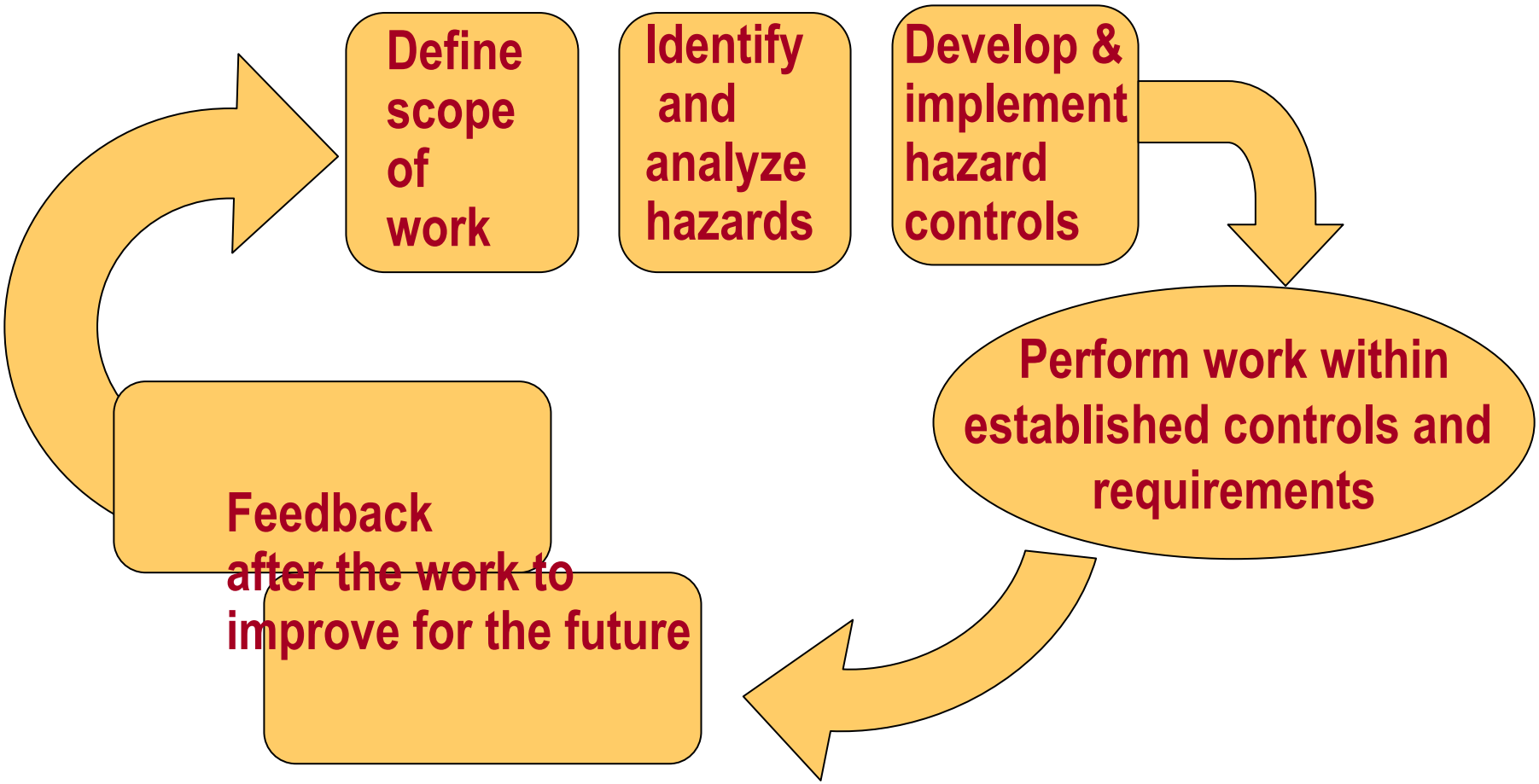
How many of these incidents would have been prevented with better planning

- 2 working hot incidents (95, 97)
- 2 electric shock (02, 04)
- 2 spills (96, 97)
- 2 cryogenic (over pressurized dewars) (97, 99)
- 2 laser incidents (Non-exposure) (99, 01)
- 1 exposure during beam alignment using synchrotron radiation visible light (02)

Consider this event reported by Newsday

- A carpenter was assigned to renovate an elevator.
- During his work, he entered the hatch at the top of the elevator and suffered a fatal electric shock when he contacted exposed electrical conductors.
- Considering the work planning core functions, how could this accident have been prevented?

The steps of work planning



Supervisor's Role in Safety

- Ensure staff are qualified and confident to perform the work safely.
  - Don't assign unsupervised work to inexperienced people.
  - Ensure that lab-level training is complete.
  - Do not assign work as "Skill-of-the-worker" if the hazards have not been adequately evaluated and controlled
  - Stop and re-plan a job when the actual conditions differ from planned conditions

Supervisor's Role in Safety (cont.)

- Provide and seek feedback
  - Be aware of how the work is being conducted
  - Praise safe behavior
  - Don't walk past unsafe practice
- Protect your staff from time pressures
- Be involved - communicate often and openly
- Act on identified issues and follow up

Providing Safety Requires Involvement

- Recognize that each group will develop its own subculture reflecting the style and values of the members and the supervisor.

- Everyone - workers, supervisors, managers- has a key role in encouraging, recognizing, reinforcing, and ensuring safe behaviors – stay involved. Your actions shape the attitudes of your co-workers.

This is a critical time for NSLS

- Be thoughtful about what you do in your role
- Follow the rules, but if it doesn't seem to fit, pull back and reconsider

Key thoughts from these meetings

- We have very high expectations for performance
- Getting the job done safely is first priority
- Rules are not discretionary, but remember good judgment is always needed
- Take a time out and reconsider if conditions aren't as expected
- If you have doubts, pull back and get help
- Everyone has a part to play – watch out for the other guy
- Life is too short to take unnecessary risks

Questions for discussion

- What do we need to do to get everyone who works here to make safety such an important part of their thinking that they:
  - plan and execute their work properly and safely,
  - don't take short cuts,
  - call attention to things that are wrong or not as planned, and
  - watch out for one another?
- What are we doing well in our safety programs? What are our strengths? What are our weaknesses?